REMARKS

This reply is submitted in response to the Office Action dated February 3, 2006. Claim 16 is amended, as noted above. Support for the amendments can be found in the original claims and throughout the specification. Thus, no new matter is added. The amendments above and remarks that follow address the points raised in the Office Action and, thereby are believed to place this application in condition for allowance.

Allowable Claims

The Office Action indicates claims 16-20 would be allowable if rewritten to include the limitations of their respective base and intervening claims. Accordingly, claim 16 has been amended to include the features of claim 10. Thus, claim 16 is now believed to be in condition for allowance. Further, as claims 17-20 depend on claim 16, they are also believed to be in condition for allowance.

Claim Rejections under 35 U.S.C. § 112

Claim 6 stands rejected under 35 U.S.C. § 112, first paragraph, for failing to comply with the enablement requirement, and claims 7-9 were rejected due to their dependency on claim 6. Applicants respectfully traverse these rejections for the following reasons.

As stated in the Response filed on September 15, 2005 to the previous Office Action, the specification at page 49, line 9 through page 50, line 36 describes calculating a cross-correlation matrix by computing two portions thereof, one of which is in the form of a square matrix and the other is in the form of a triangular matrix (i.e., matrix portions HJKM and ABC shown in FIGURE 10). Accordingly, the specification enables claim 6. Thus, withdrawal of the rejections of claims 6 and 7-9 are respectfully requested.

Claims 3, 4, 13, and 14 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, the Examiner states that these claims do not specify "detection statistics." Applicants respectfully disagree.

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As noted in the Response filed on September 15, 2005 to the previous Office Action, claims 3 and 13 recite generating detection statistics *corresponding to symbols transmitted by the users and encoded in the waveforms as a function of the cross correlation matrix.* Because the detection statistics are claimed as relating to symbols transmitted by the users and encoded in the waveforms as a function of the cross correlation matrix, the claims are definite. Reconsideration of the rejection is respectfully requested.

Claim Rejections under 35 U.S.C. § 103

The Office Action indicates that claims 1 and 10 are rejected under 35 U.S.C. §102(e). Basing the rejections on §102(e) appears, however, to be in error as the Examiner combines the teachings of *two* references, rather than a *single* reference, to reject the claims. Hence, in this response, Applicants assume that the Examiner intended to reject claims 1 and 10 under §103(a) as being obvious in view of the combined teachings of U.S. Publication No. 2002/0051433 of Affes and U.S. Publication No. 2001/0053177 of Papasakellariou.

Claim 1 is directed to a method of processing spread spectrum waveforms transmitted by a plurality of users of a spread spectrum system. The method comprises distributing among a plurality of logic units parallel tasks, each for computing a portion of a matrix indicative of cross correlations among the waveforms transmitted by the users. The method further includes partitioning computation of the cross-correlation matrix such that a computational load associated with a task distributed to one of the logic units is substantially equal to a computational load associated with another task distributed to another logic unit. The distributed tasks are then executed with the plurality of logic units.

Affes purports to teach a CDMA system with interference suppression. Affes, however, does not teach partitioning the computation of a cross-correlation matrix among a plurality of logic units so that the load on each logic unit is substantially equal. In particular, the despreaders in Affes are not configured to compute, in parallel, different portions of a cross-correlation matrix. Nor does Affes indicate that the processing loads on the despreaders are substantially equal.

Further, Papasakellariou does not remedy the deficiencies of Affes. Papasakellariou purports to teach a cross-correlating processor. Papasakellariou, however, does not teach distributing the computation of a cross-correlation matrix among a plurality of logic units such that the computational load associated with one logic unit is substantially equal to that associated with another unit.

Thus, claim 1 is patentable over Affes in view of Papasakellariou.

Claim 10 is directed to a method of processing spread spectrum waveforms transmitted by a plurality of users of a spread spectrum system. The method comprises partitioning computation of a matrix representing cross-correlations among the waveforms transmitted by the users in accord with a pre-defined metric, and distributing among a plurality of logic units parallel tasks each corresponding to one of the partitions for computing a portion of the matrix. The method further includes executing with the plurality of logic units the distributed tasks, and assembling said computed portions to generate the cross-correlation matrix. The cross-correlation matrix is represented as a composition of a first component that represents correlations among time lags and code sequences associated with the waveforms transmitted by the users and a second component that represents correlations among multipath signal amplitudes associated with the waveforms transmitted by the users.

Affes does not teach partitioning a cross-correlation matrix, or any matrix for that matter, according to a pre-defined metric, as recited in claim 10. Nor does it teach distributing computation of such partitions as parallel tasks among a plurality of logic units. Papasakellariou does not remedy these deficiencies of Affes, as Papasakellariou merely teaches a cross-correlating processor, as discussed above, and does not teach or suggest distributing compuation of a cross-correlation matrix among a plurality of logic units.

Thus, claim 10 is patentable over Affes in view of Papasakellariou.

Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Affes, Papasakellariou, and further in view of U.S. Patent No. 5,647,059 of Faruque.

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Claim 3 depends from claim 1, and hence contains all of its features. As previously discussed, claim 1 is patentable over the combination of Affes and Papasakellariou. And Faruque does not remedy the deficiencies of Affes and Papasakellariou. Faruque purports to teach a method of utilizing CDMA with a dial-up modem. Faruque, however, does not teach partitioning the computation of a cross-correlation matrix among a plurality of logic units such that computational loads associated with different logic units are substantially equal.

Thus, claim 3 is patentable over the combination of Affes, Papasakellariou and Faruque.

Claims 4, 5, and 12-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Affes, Papasakellariou, Faruque, and further in view of U.S. Patent No. 6,600,729 of Suzuki.

Claims 4 and 5 depend from claim 1 and claims 12-14 depend from claim 10, and hence contains all of their features. As previously discussed, claims 1 and 10 are patentable over the combination of Affes and Papasakellariou. Faruque and Suzuki do not remedy the deficiencies of Affes and Papasakellariou. Faruque purports to teach a method of utilizing CDMA with a dial-up modem. Suzuki purports to teach a DS-CDMA (Direct Sequence--Code Division Multiple Access) multi-user interference canceller and communication system. Neither Faruque nor Suzuki, however, teaches partitioning the computation of a cross-correlation matrix among a plurality of logic units such that a computational load associated with one logic unit is substantially equal to that associated with another logic unit.

Thus, claims 4, 5, and 12-14 are patentable over the combination of Affes, Papasakellariou, Faruque and Suzuki.

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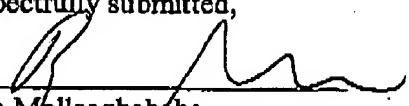
Conclusion

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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